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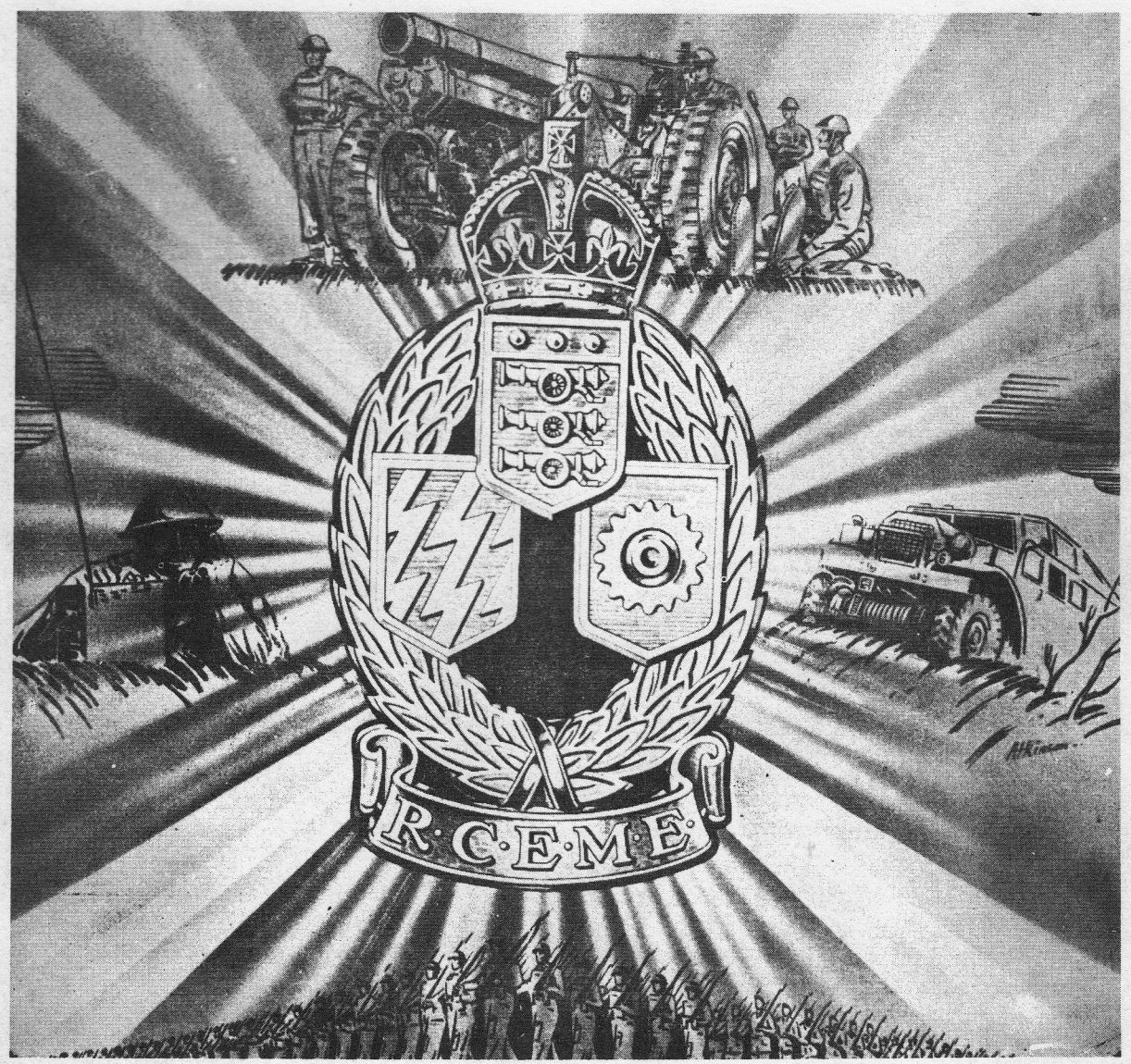
TECHNICAL BULLETIN

SILVER ANNIVERSARY ISSUE



VOLUME 14 NUMBER 2 NOV 69

RCEME TECHNICAL BULLETIN

THIS TECHNICAL BULLETIN IS PUBLISHED BY AUTHORITY OF COLONEL A L MACLEAN,CD, HEAD OF THE CORPS OF R C E M E WHO HAS APPROVED THE CONTENTS FOR PUBLICATION.

THIS TECHNICAL BULLETIN IS PUBLISHED TO ASSIST RCEME PERSONNEL IN KEEPING INFORMED OF CURRENT TRENDS IN DEVELOPMENTS, TO CIRCULATE NEWS OF THE CORPS AND INDIVIDUAL ACTIVITIES, AND ALSO TO PROVIDE A FORUM FOR DISCUSSION AND THE EXCHANGE OF IDEAS BY MEMBERS OF THE CORPS.

THE INFORMATION AND STATEMENTS HEREIN DO NOT NECESSARILY REPRESENT OFFICIAL POLICY AND ARE NOT TO BE QUOTED AS AUTHORITY FOR ACTION.

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EXECUTIVE EDITOR	**MWO R R GIBSON, CD**

FORWARD YOUR ARTICLES AND IDEAS TO

THE EDITOR
RCEME TECHNICAL BULLETIN
THE CANADIAN FORCES SCHOOL
OF COMMUNICATION AND LAND
ORDNANCE ENGINEERING

VIMY BARRACKS
KINGSTON, Ont.

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PREVIOUS ISSUE VOL 14 NO 1 MAY 69

Message from the Head of Corps

Colonel AL Maclean, CD

I want to take this opportunity to extend to all ranks of the Corps of RCEME and their families my best wishes for a happy and satisfying year during 1970.

The year just ended has been one of the interesting ones for those of us in the Land Maintenance environment. In Feb, The RC Sigs School and The RCEME School were united to form The Canadian Forces School of Communications and Land Ordnance Engineering, now the main land environment technical training center. The officers have been given a new classification system and the majority of the RCEME officers are to be called LORE officers. The tradesmen have been segmented to various career managers and integrated with their brother tradesmen in the air environment. These are signs that unification is taking a firm grip on the services as a whole and it sounds the bells of doom for the corps structures. These and many other changes that affect the RCEME Corps has forced us to examine closely many of the ideas and procedures to which we adhered in the past.

Despite the many changes in concepts and organizations that have taken place we, the members of the RCEME Corps, are continuing to perform our traditional role and, in fact, have assumed a few additional tasks such as ammunition care and repair. The first of our ATOs (Ammo Tech Officer) are on their way to England to be trained. Although the future, at present, is hazy and few, if any, can see more than shadows in the mist there is one truism that shines bright "As long as there is technical equipment in the Canadian Forces there will be a body of highly skilled men, such as the RCEME Corps, required to repair and maintain the equipment". So there is a future. The name may be in doubt but the role is a certainty.

All in all, I believe we can look forward to an exciting year in the RCEME family during 1970. I would request that you continue to put forth your best efforts for the ultimate benefit to yourself and your country.

Again, my best wishes to you all.

EDITORIAL

A new board has been appointed for the Technical Bulletin and this is our first edition. We sincerely hope readers will forgive us our obviously amateurish work. We, in our ignorance, accepted the task without realizing that professionalism in this field, as in others, requires skills and tools which in this case we do not possess. Our earnest wish is to improve this situation and our appeal to you, the reader, is to assist us by providing contributions in the form of articles and newsworthy items, thereby freeing the editorial staff to concentrate on the future editions.

Features are the mainstay of any magazine and we are grateful to the authors of those appearing in this edition. We would like to include a personality page with the biographies of the authors and for this purpose invite photographs and autobiographies with future articles.

Future editions can be expected to continue the "Who's Where", even though the necessary information is getting harder to compile due to the segmentation of the trades to various career managers. We are also extremely short of photographs for the back cover. For this, all we need is a good impact photograph of any subject. There are many amateur photographers in the Corps who could provide copy for this page.

In future editions we, the staff, hope to introduce a new division of the information presented; a section for the expression of views and general information news articles called the Professional Section and a section for technical information such as successful local remedies to technical problems or a request for a solution to a technical problem called the Technical Section. This division should aid you, the reader, in locating information rapidly. However, all these plans require some time to mature but we hope they will provide you with a magazine of high interest and usefulness. We would welcome your criticism and comments anytime you feel compelled to write.

R.C.E.M.E.

The Corps of Royal Canadian Electrical and Mechanical Engineers

Foreward

With 1969 being the twenty-fifth anniversary of the formation of the Corps of Royal Canadian Electrical and Mechanical Engineers, we felt it appropriate to republish the first article about RCEME to appear in a service publication. This article appeared in the June 1944 issue of CAM, which was more or less a fore-runner of our present Technical Bulletin.

Some of the oldtimers may remember reading the original article, sitting on the running board of a Diamond-T wrecker or taking a break after working on a 25-pounder, and discovering for the first time just what the "brass" had in mind when they handed out those new hat badges and shoulder flashes. Needless to say, in those days it was sometimes difficult to even find out what unit you belonged to.

To the younger members of the Corps, who may not have even been born by June 1944, we suggest you read this as an interesting part of Corps history. You will find that from the very beginning each member of RCEME was expected to maintain a high standard of efficiency and a professional approach to their job. The reputation of RCEME over the past twenty-five years for "getting the job done" proves that we have lived up to those expectations.

-- Editor

A major reorganization of the repair and maintenance services of the Canadian Army both overseas and in Canada took place when, on the 15th of May 1944, a new Corps, the Royal Canadian Electrical and Mechanical Engineers, came into being.

The function of this new Corps can be set down under four main headings.

First -- Inspection and Maintenance of Wheeled and Tracked Vehicles, all artillery (including field, anti-aircraft and coast defence), small arms and machine guns, radio location, fire control and all other instruments, signalling equipment and transmitting sets and the installation of coast artillery machinery.

Second -- the recovery and repair of all the above equipment consequent upon ordinary wear and tear or battle casualties.

Third -- Investigation into defects of design and recommendation for improvements.

Fourth -- Advice on prototype design from a maintenance angle.

Thus the R.C.E.M.E. have assumed the chief responsibility for maintenance and repair for the Canadian Army - a job that previously had mainly been carried out by the R.C.O.C. in addition to their responsibilities for the provision and supply of technical stores, general stores and clothing.

The R.C.O.C. will continue to hold the spare parts for repairs but R.C.E.M.E. will hold in their workshops only a working stock of such spare parts. This necessitates the closest co-operation between the two corps.

Certain electrical and mechanical engineering duties have also been transferred to R.C.E.M.E. from R.C.E. and R.C.A.S.C. The R.C.E. however, continue to be responsible for the provision and repair of certain equipment peculiar to themselves, and the R.C.A.S.C. continue to operate Workshop platoons which form an integral part of their transport companies and carry out repairs within the R.C.A.S.C. forward areas.

Obviously the rapid increase in the use of technical equipment for military purposes during the present war has brought with it the need for an immense and ever increasing volume of maintenance and repair. And these maintenance and repair services must be designed to keep such equipment in the highest state of efficiency under all conditions.

Therefore, with this in mind, R.C.E.M.E. was authorized with two main objects in view.

(a) to provide more satisfactory direction and co-ordination of maintenance and repair services. (b) to provide more economical use of skilled manpower in the Canadian Army.

Canada has the advantage of precedent in the parent British Corps. The formation of the R.E.M.E. Corps in the British Army was the result of exhaustive study and investigation over a period of years by several committees of high ranking officers and eminent industrialists. One of the most outstanding reports in this connection was that of Sir William Beveridge's Committee on the 'Use of Skilled Men in the Services', presented by the British Minister of Labour and National Services to Parliament. Para 44 of this report, which proposes the formation of a Corps of Mechanical Engineers in the British Army reads in part as follows :-

"....that the Navy has had, for so long, an engineering branch of high authority and has had other technical branches specialized on torpedoes and electricity..... The Navy is machine-minded. The Army cannot afford to be less so. The Navy sets Engineers to catch, test, train and use Engineers. Until the Army gives to Mechanical and Electrical Engineers, as distinct from Civil Engineers, their appropriate place and influence in the Army System, such engineers are not likely to be caught, tested and trained so well as in the Navy; there is a danger that they will be misused by men whose main interests and duties lie in other fields."

It is not surprising then that in 1942, on the 1st of October of that year, the R.E.M.E. Corps came into being in the British Army. The progress and operation of this British Corps has been closely watched and has been the object of constant study by officers concerned with maintenance and repair in the Canadian Army. Based on these studies and observations, both in Canada and the Canadian Army in the field, it was decided to regroup the maintenance and repair services during wartime.

The bulk of the personnel for the new Corps were drawn from the maintenance and repair groups and units of the R.C.O.C. The officer personnel of the corps consists of Electrical and Mechanical Engineers and Mechanical Officers, whilst of the Quartermaster category there are Assistant Electrical and Mechanical Engineers, Assistant Inspectors and Workshop executive Officers.

To qualify as an E.M.E. Officer, candidates must be in possession of a degree of B.Sc. in Mechanical or Electrical Engineering or have good practical mechanical or electrical engineering experience and general education suitable to the needs of the R.C.E.M.E. Corps. The appointment of Mechanical Officers is restricted to personnel in possession of sound practical experience and general education suitable to the needs of vehicle maintenance. Officers of the Quartermaster category are appointed from the ranks of the Armament Artificer, Artisan and Armourers sections.

Other ranks of the R.C.E.M.E. Corps can be divided into five sections or categories, namely: Armament Artificers, Armourers, Artisans, clerks and storemen, and general duty -- non tradesmen.

How will the R.C.E.M.E. Corps function in the field? There again the tried and proven British counterpart provides the model. Called the Echelon System of Repair the system is composed of four echelons or zones, each with a definite normal function, which combined with the considerations of the types of equipment to be served, at once fixes the corresponding repair equipment to be provided to each R.C.E.M.E. unit and also the technical personnel and stores required.

By confining the lower echelons (1st and 2nd) to minor and quickly made repairs and adjustments and the exchange and replacement of assemblies, the higher 3rd and 4th echelons equipped with greater facilities in equipment and personnel perform the major and more involved repairs.

First echelon repairs consist of adjustments and light repair, which are carried out both by the Unit concerned and R.C.E.M.E. personnel in the form of Light Aid Detachments, the latter in general carrying out minor repairs beyond unit capacity and assisting the unit in recovery.

The Light Aid Detachment, the smallest type of R.C.E.M.E. unit, is commanded by a subaltern or warrant officer and is wholly identified with and under the command of the Unit, Regiment or Brigade which it serves. To Light Aid Detachments fall the task of locating casualties and, if possible, repairing them on the spot. Another chief function of an L.A.D. is to keep the roads clear for movement.

Behind the Light Aid Detachments and situated in the Divisional Area are the Brigade Workshops. These are divisional troops, but are normally allocated to Brigades which they serve. Their basic function is repair by assembly exchange -- designated as 2nd echelon repairs.

The equipment and facilities of these units take the form of machine lorries of various types, thereby providing the necessary mobility and lending itself to organized dispersal and

and camouflage in order to present a difficult target for enemy aircraft and artillery fire.

They work in close liaison with the Light Aid Detachments in front of them, and under certain circumstances, an advanced Workshop detachment is formed from the Workshop Unit personnel and equipment for carrying out repairs on the spot which are beyond the capacity of the L.A.D. and unit maintenance personnel. This arrangement overcomes the need for recovery of a large percentage of casualties to the parent workshop. These advanced workshop detachments, while they cannot be regarded as a cohesive field workshop, are highly mobile and consist of a number of servicing detachments.

Third echelon repairs are defined generally as assembly repair by exchange of components, whereas complete overhauls and rebuilding comprise 4th echelon repairs.

Workshop Units whose basic function is 3rd echelon repairs are semi-mobile and not required to move frequently, therefore their transport is limited.

Finally there is the 4th echelon represented by the large base and advanced base workshops. These workshops are on fixed sites, the equipment being scaled to undertake continuously the heaviest type of repairs. Power, light, heat, water, road and rail access are essential if such workshops are to function efficiently within reasonable time limits.

The evacuating of heavy vehicles and armaments to rail or road heads for clearance to 3rd and 4th echelon workshops is carried out by the R.C.E.M.E. Recovery Companies.

Under normal conditions the L.A.D.s and Brigade Workshops carry out recovery operations in the Divisional Areas. However in circumstances where heavy casualties occur, sections from these Recovery Companies, amply supplied with heavy tank transporters, breakdowns etc., move into the Divisional Areas and assist the L.A.D.s and Brigade Workshop recovery units.

One of the less functional yet very essential items that go with the formation of any new corps is the designing of badges, buttons, flashes, etc.

The adopted badge design is shown on the cover of this issue. The shields represent the three divisions of maintenance, i.e., Armaments, Telecommunications and Vehicles. The wreath is the traditional heraldic laurel design representing victory and the surmounting crown symbolizes the Sovereign ownership.

The colours of the Corps follow those of the British R.E.M.E. which are dark blue, yellow and red -- derived by combining the colours of the R.C.O.C., R.C.A.S.C. and R.C.E.

Men of R.C.E.M.E. are soldiers -- they have been trained in basic and advanced infantry warfare, they have been taught how to use their weapons effectively and how to protect themselves -- but that is not all. Every craftsman in this corps must be more than a fighter; he must be a qualified technician before he is ready for field service.

This, then, is R.C.E.M.E. -- new in name but wise in experience gained from the parent R.E.M.E. Corps in North Africa, Sicily and Italy, which has already established an enviable record and does honour to the Corps from which it was formed. It will most certainly make a name for itself in this war and its inception will be remembered as a step forward in military organization and efficiency.

NUMBERS GAME

Ethiopian tribesmen, travelers say, can only double or halve numbers, and that only by using pebbles as counters. Yet merely by halving and doubling, they take any two numbers, multiply them and come out with the right answer.

Say a tribesman wants to buy 15 sheep at 13 Ethiopian dollars each. How many is that? Here's how he goes about finding out. Put 13 in a left hand column, 15 on the right. Halve the left figure; you get $6\frac{1}{2}$. Ignore the $\frac{1}{2}$; Ethiopians don't know anything about fractions. Double the right hand figure. Keep this up until the left hand figure is 1. Now you have:

13	15
6	30
3	60
1	120

Even numbers in the left column are evil, the superstitious tribesmen say, and must be destroyed, together with their guilty partners. So scratch out 6 and its partner 30. Now add the right hand column and you have the right answer: 195. Try it with any two numbers; it does not matter which is halved or doubled; the answer is always right. The Ethiopian's primitive mind simply cannot grasp how our system works. Of course you see at once how his works. Or do you?

SUNNY LAGER 1969

BY CAPT RV POTTER

PREPARE TO THROW - THROW! Cpl Reid of Maint Sec lets fly with another ringer as Cpl Wheeler and Pte Crossman line up on the other pitch. In the background Capt Potter and Cpl Goulden discuss the competition.

THE SING-IN. - Cpl Belzner on the "fiddle" and Cpl Dowling on the guitar. In the background, the SMP Rodeo continues to attract spectators.

* * * *

If you have just been warned of a posting to Germany and all the "old soldiers" are giving you the lowdown on the 4 Brigade non-stop exercises and "war is hell" and all that, then read on if you want to see it told the way it is.

The Service Battalion just got back from three weeks at Exercise Sennelager, and take it from me -- war may be hell, but a little asbestos goes a long way.

Sennelager '69 was the first time the newly-inaugerated Service Battalion bivouacked together in its entirety for training in the field, and it certainly does include more than just the Maintainers and the Slow and Tardy (S&T) Company. The Maintenance Company found that out every day as they walked past all of them on their way to the combined Svc Bn Officer/Sgts Mess. I won't go into that though, as my writing of all sorts hereafter will be as a member of a Sub-unit, who sees and reports on just the LITTLE PICTURE.

Well, the little picture as seen by the Maintenance Company this year was not exactly a circle of picnics, parties and balls, but there were breaks in the work schedule. Sennelager being primarily for individual and platoon training, it was tough on Maint Coy to perform both its aims at the same time, i.e., keep the Brigade on the road and still do our annual refresher training. But in the best tradition of 4 Field Workshop we managed to get the best out of both - driving the body all day against a crushing workload, but closing sometimes half a platoon at a time to do weapons training or tip-toe through the gas chamber.

And like anywhere else, the group that works hard and trains hard also plays hard. A day was set aside, the Sunday of our middle weekend, for a field day which, as the above pictures bear out, included everything from a horse shoe tournament to a 3/4 ton SMP rodeo, with activities across the spectrum including fastball, volleyball and even a sing-in.

* * * * * * * *

POWERFUL STUFF

You wouldn't sit on a keg of T.N.T. and smoke a cigar would you? In fact, we doubt if you would even want to sit on a keg of T.N.T. We've seen some fellows, though, that have done lots worse things -- such as welding a gas tank on a vehicle.

We happen to know a professor who has a storehouse full of useful bits of information. The professor has given us some dope about gasoline and we thought you would like to know what he said.

The two common elements that gasoline consists of are hydrogen and carbon. About 15% by weight of gasoline is hydrogen, which is the lightest of all elements. Hydrogen will burn and when it burns in a small space will cause a terrific explosion. Enough heat is liberated by the burning of one pound of hydrogen gas to raise 62,100 pounds of water one degree Fahrenheit.

Carbon, the second element in gasoline is another very common element. The purest form of carbon is the diamond but we also find it in coal, lamp black and all sorts of things. Carbon also has a high heating value and the burning of one pound would raise 14,600 pounds (or more than $7\frac{1}{4}$ tons) of water one degree Fahrenheit.

The combination of these two highly important elements, hydrogen and carbon, makes the ideal fuel for the gasoline engine.

If you were asked which had more energy per pound -- gasoline or pure nitro-glycerine -- and you said gasoline, you'd be correct. In fact, if we could use pure nitro-glycerine instead of gasoline in an automobile we would only get about 3 miles per gallon instead of the 18 or 20 miles per gallon we get using gasoline.

The following list will give you an idea of how the energy in different explosives compares to the energy in gasoline:

GASOLINE	- 19,000 B.T.U.
T.N.T.	- 6,500 B.T.U.
NITROGLYCERINE	- 3,200 B.T.U.
DYNAMITE #1	- 2,500 B.T.U.
BLACK POWDER	- 1,850 B.T.U.

B.T.U. means British Thermal Unit. One B.T.U. is the amount of heat required to raise one pound of water one degree Fahrenheit.

Here's another good illustration of the amount of energy in a gallon of gasoline. The General Motors Building in Detroit covers an entire city block. It weighs 460 million pounds, yet if all the energy contained in one gallon of gasoline could be converted into work, it would be enough to lift this entire building $2\frac{1}{2}$ inches off the ground.

Hmmm -- we see what the professor means and so we're going to swear off smoking around vehicles and gas tanks. How about you?

Speaking about gas tanks -- what about repairing them? This is a hazardous job and unless special precautions are taken, you may find yourself a Sergeant in Satan's Service Battalion.

The first thing to consider, before attempting a repair, is to get rid of all the fumes in the tank. This can be done by filling the tank with water and agitating it by shaking and revolving. This operation must be thorough so that the water will absorb all of the gasoline.

Next, dry the inside of the tank with compressed air using a rubber hose as a nozzle. The reason rubber is used, it eliminates the possibility of a spark caused by a metal nozzle striking the tank. When dried thoroughly, again fill with water to the point requiring repair, being sure that the tank has an opening for proper ventilation. The tank can then be soldered or welded without any danger of blowing you and your equipment through the roof.

If you are fortunate in having a "Steam Jenny" at your disposal, the cleaning operation can be done by using hot water and steam instead of plain water. After the tank has been thoroughly hosed out it should be dried with compressed air as in the other method and then partly filled with water before any soldering or welding is done.

The whole thing boils down to the fact that CAUTION is darn good LIFE INSURANCE.

END

Dear Ma:

Right now I am the lonliest and most unhappy man in the Canadian Armed Forces. Since the boys out in the field are not writing to me I figured I may as well write to you.

Maybe those fellows in the Post Office are on strike again. I haven't had a letter for months asking me to solve a problem, and you know how good I am at giving advice. Remember the time your girdle was coming apart and I told you how to fix it by using the wires from an old toaster element? Everything would have been all right if you had only cut off the cord. I can still hear your screams when Dad plugged you in by mistake.

Anyway, back to my problem. The boys used to write and ask me such things as how to speed up the distribution of manuals, how to fix a faulty Power Supply and where to find information on some of the older equipments. Some technicians wrote just to pass on details of a better way of doing a repair. Needless to say, I was always able to come up with the right answers for the boys because I would go right to the experts and make them work for their money.

Ma, I am worried. As you have read in the paper they are reducing the forces and sooner or later someone is going to find out that for the past few months I have had nothing to do except read Playboy. If that happens I may be released and have to come home and live with you again.

Do you have any ideas how I can get the boys to start sending me their problems again? They can't all be so smart that they don't have any. I just want to let them know I am ready to help them any time they need help.

Your loving son,

O'Sweat

P.S. - I am sending you a new toaster for Christmas.

****

Dear Son:

Stop ruining your mind with those Playboy foldouts and read something educational like the EME Manual. Get off your fanny and use the brains the good Lord gave you.

I know you changed the name of that place you work in Kingston - have you told everyone your new address? Do the younger fellows know how smart you are and how much help you have been in the past? Why don't you publish your letter and my reply in the Tech Bulletin and see what happens? Maybe you will get more work than you can handle.

In any case, stay in the forces. I still have your father at home and one like him is enough.

Love,

Your Mom

P.S. - Keep your d--n toaster!

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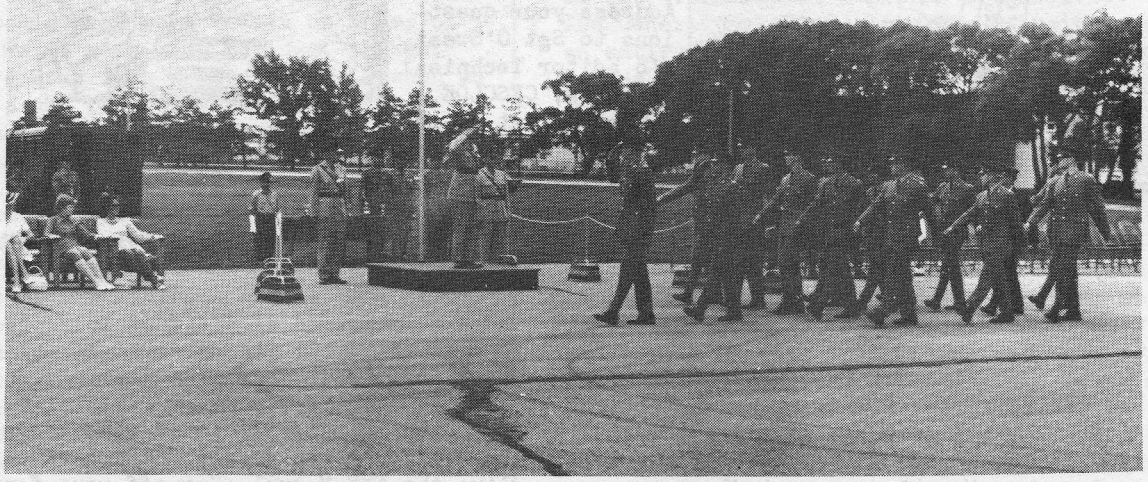
Dear Ma:

I am taking your suggestion and publishing the letters.

Sorry you don't want the toaster. I am sending you a new girdle instead.

Your loving son,

O'Sweat



ROTP GRADUATION

BY MWO RR GIBSON

Tuesday, 12 Aug 69, marked the end of summer training for thirty-one RCEME ROTP Cadets at CFSCLOE. On that day, the seventeen Phase 2 and fourteen Phase 3 cadets were joined by the RC SIGS ROTP Cadets for a combined graduation parade and inspection by Col LH Wylie, CD, Commandant of The Canadian Forces School of Communications and Land Ordnance Engineering.

Col Wylie, after complimenting the cadets on their excellent performance, observed that this was the first officer class to graduate in this category, that is, since the officer classification system became a fact in the spring of 1969. The RCEME cadets are destined to become LORE (Land Ordnance Engineering) officers while the RC SIGS cadets will join the CELE (Communication-Electronics Engineering) classification.

"You have a tremendous responsibility", said Col Wylie, "because you are the generation that will have to make the unified force work in its new form. This will require imagination, energy and, above all, lots of patience".

Following the parade, a number of cadets were called forward to be presented with achievement awards. Those receiving awards were:

Cadet D Warren	BEST ROTP CADET, SECOND PHASE
Cadet T Westran	GENERAL PROFICIENCY, SECOND PHASE
Cadet W Tait	TECHNICAL ACHIEVEMENT, SECOND PHASE
Cadet R McLeod	CFSCLOE ATHLETIC ACHIEVEMENT

Since their training had commenced on 9 Jun, the cadets' busy summer had included 3 training exercises, a driving rally, a short training period with each trade company in CFSCLOE and a trip to CFB Petawawa for a Fire Power Demonstration.

HOW WELL DO YOU SPELL?

GHOUGHPHTHEIGHTTEAU -- What does this formidable looking word spell? Well, believe it or not one of our bright young techs claims that it spells "potato".

Here's the way he sees it: "gh" stands for "p", as you will find from the last letters of "hiccough"; "ough" for "o", as in "dough"; "phth" stands for "t", as in "phthisic"; "eigh" stands for "a" as in "neighbour"; "tt" stands for "t", as you will find it in "gazette"; and "eau" is for "o" as in "beau".

* * * *

← Cdt D Warren receiving the Best ROTP Cadet (2nd Phase) Award from Col LH Wylie, CD

Good Show

The following is reprinted from "Flight Comment", July/August 1969 issue. This publication, produced by the CFHQ Directorate of Flight Safety, pays tribute in each issue to service personnel who, by reason of their alertness and competence, have taken some action which averted an aircraft accident or was a commendable contribution to flight safety.

During the past few years a number of RCEME tradesmen employed in aircraft maintenance have been so honoured, indicating the degree of professionalism they have brought to this relatively new field of RCEME accomplishment.

Cpl Covyeow, who received his aircraft maintenance training at CFB Rivers, is now serving with 403 Helicopter Operational Training Squadron, CFB Petawawa.

CPL L.W. COVYEOW

On coastdown after termination of the flight, Cpl Covyeow, a crewman of a CUH-1H, heard an unusual noise and noted that the power turbine came to an abrupt halt. His report led to an investigation which disclosed a washer jamming the power turbine rotor. This discovery prompted a dismantling of the engine. A stud holding a bearing housing had sheared allowing the washer to fall and pass through the engine; fortunately the broken stud was held in place by its locking wire. Another stud was ready to fail; later, a stud was found sheared in another aircraft.

Had the engine been started it could have been damaged beyond repair. Cpl Covyeow's alertness and initiative resulted in the timely detection of a serious flight hazard.

SUPPORT SYSTEMS MANAGEMENT

BY CAPT RA BERGERON

This subject has been mangled in a multitude of ways, however, my attack (which I hope will shed more light) will use an actual project as the vehicle on which to propel my conjectures regarding support systems management.

Let us begin with the key word "system". "System" is a busy word in everyday usage and comes in many forms and definitions. Management is deluged daily with books, magazines, articles and seminars dealing with systems in one form or another. The spotlight moves from hardware systems to software systems, data systems, information systems - you name it and you can add "system" for sound effects, ie, the word "system" can be tucked into names describing a simplification of paper work, a janitorial cleaning route or the highly complex system effectiveness/cost effectiveness concepts. Some systems are relatively easy to delineate, eg, the DDH 280 can be called a system and its engines a sub-system; then again the engine can be called a system and the turbine portion the sub-system. So what is a system?

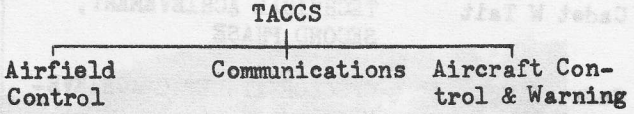
This has probably led to confusion, however it serves to note the main point regarding systems. It is a concept - and unless tied to specific things, it means nothing.

What is a "support system"? There is no clear cut Canadian Armed Forces version of this term, however, for purposes of this article I will quote the definition of "support system" as defined in the glossary of terms of the CADIN/PINETREE Support System Logistics Plan dated 28 March 1968:

> SUPPORT SYSTEM - "A composite of equipment, personnel, resources, skills and techniques which, while not an instrument of combat is capable of performing a clearly defined function in support of an Armed Forces mission".

What is "support systems management"? In plain language it means 'seeing the thing as a whole'. To demonstrate that statement, let me introduce the vehicle I promised earlier.

It is called Tactical Air Command and Control System (TACCS). This system is broken down into three general categories:



It is considered a support system for it is required to control the activities of CF-5 and Buffalo aircraft, and various helicopters in their operational role.

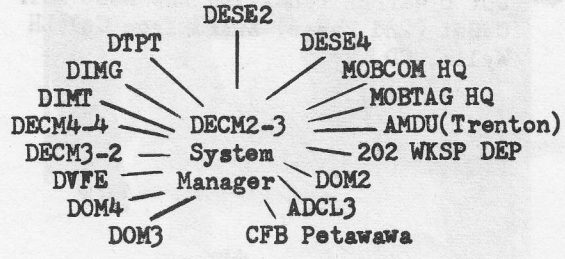
The role of DECM was to respond to DESE requests regarding maintenance aspects of the system. Also, new equipment was not available for all portions of the system and therefore DESE delegated DECM to refurbish three convoys from 1 Air Division in Europe as an interim measure. Within DECM, I was selected as "system manager" and therefore I became responsible for the DECM functions regarding this system.

One convoy in the COMMUNICATIONS category was cancelled because of feedback provided regarding the equipment. Two convoys were scheduled for the AIRFIELD CONTROL category, however only one was completed; the other is presently in abeyance pending policy decisions.

In terms of the completed convoy, I was responsible to see that

a. Communications, radar, ADF equipment, and vehicles be refurbished at CFB Trenton.
b. APUs be refurbished at CFB Montreal.
c. The convoy be assembled, installed, tested, and handed over at CFB Petawawa. This includes the control of movement of all equipment, layout of vehicles, proper power cabling, and the arranging of logistics support spare parts, test equipment and Engineering Orders.

The personnel that I dealt with regarding this convoy belonged to the various organizations as follows:



It is readily seen from the number of contacts that there is no time to become a specialist in all fields and therefore my specialist activity consisted of meshing all the information available from these people into an outlook consistent with the purpose of TACCS.

There were myriad problems related to this system and as I analysed the situation it became clear that there were basic root causes. I will deal with these first, then show what types of problems they presented and how I dealt with these.

There are two major barriers to successful systems management:

1. Organizational
2. Psychological

ORGANIZATION BARRIERS

There are basically two extreme forms of organizations:

1. Mechanistic - this is the traditional bureaucratic form appropriate for stable conditions
2. Organic - this is appropriate for changing conditions.

The major contrasts are shown in the following table:

MECHANISTIC	ORGANIC
Functional breakdown of whole task into specialty segments	Contribution of specialties to whole task
Commitment to function (means)	Commitment to whole task
Integration via hierarchy	Integration by continual readjustment through interactions with others
Precise definition of authority	No limitation on authority or responsibility
Limited responsibility commensurate with authority	Broad commitment to organization and to tasks
Full knowledge of situation only at top	Knowledge diffused, any location may become ad hoc center of control
Vertical interaction	Lateral and diagonal interaction
Operations governed by instructions and decisions of superiors	Communication consists of information and advice
Loyalty and obedience are primary conditions of membership	Commitment to tasks and "technological ethic" more highly valued
Localistic orientation	Cosmopolitan orientation

It is readily seen where the Armed Forces lean and here is the start of the problem for systems management must lean the other way, ie, organic.

As you and I well know the ritual of following orders is drilled into everyone by the Armed Forces in the military training and in fact is a necessity for field units. Once systems management concepts are inserted into the mind, it is the "in" thing to mouth the words - however - the instinct of military training forces the actual motions.

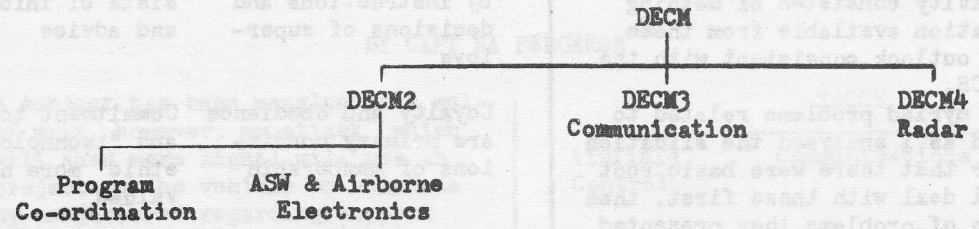
Example - 'put it all on paper'. This attitude is an anachronism of the days when it was cheaper to write than to talk. Note that I'm not saying NO paperwork but rather expressing a need for a happy balance between all paper and no paper.

Example - 'follow the chain of command'. This is the creator of red tape. There is no reason for middle and senior management to see all the piddly problems arising in the system.

There are basically two methods of managing systems and these are defined as follows:

1. Project Management
   - form of organization in which a project manager has the authority to supervise the work of personnel working on his project and also to perform the annual merit review of these personnel. This is more suited as the answer to numerous short-run problems.
2. Matrix Management
   - form of organization in which a project manager supervises the work of the personnel assigned to his project, but merit review is handled by a functional manager. This is more suited to numerous long run problems.

In terms of organizations in DGM, Matrix Management types are those whereby the sections are divided into specialties and one group is called Programs or such names. For example, DECM is divided basically into 3 groups:



The following chart outlines the basic differences between Matrix and Project Management.

SUMMARY OF ORGANIZATIONAL IMPACT OF PROJECT MANAGEMENT VERSUS MATRIX MANAGEMENT

Concept	Matrix Management	Project Management
Control over personnel	Personnel on project report to other supervisors who have several objectives that are not coincident with that of the project manager.	Personnel on project report directly to the project manager.
Supervisory effect of technical effectiveness	Greater effectiveness is implied by direct supervision of engineers by technically superior managers.	Less effectiveness is implied by the direct supervision of engineers by technically inferior managers.
Flexibility of manloading	Personnel can be transferred for short periods of time since a functional manpower pool with other work can be rearranged in the short run.	Peak manpower needs must be met by overtime while valleys in manpower needs cannot be handled in the short run due to organizational barriers to temporary transfer.
Project communication	Understanding of the relationship between functions is poor and this results in communication problems.	Understanding of the relationship between functions is good and this results in a lessening of communication problems.
Utilization of scarce personnel	Utilization is good due to the ability of specialists to swing from project to project as the need arises.	Utilization is poor due to the inability of specialists to work on other projects.
Quick reaction capability	Quick reaction capability is hampered by poor communications and lack of priority control over other programs and facilities.	Quick reaction capability is aided by good communications and control over personnel and facilities. It is hampered by the shortrun manpower inflexibility.
Maintaining technical capability	Ready contact is maintained with others in the same technical specialty, aiding group to keep abreast of the state-of-the-art.	Infrequent contact is maintained with others in technical specialty, hindering ability to keep abreast of the state-of-the-art.
Cost control	Cost control is better due to flexibility of manloading but less effective due to the lack of direct control over the performance of the personnel.	Cost control is poorer due to the tendency of personnel to continue on the project during work load valleys but is more effective due to direct control over the performance of the personnel.

You will note that Matrix Management is effective in terms of "Utilization of scare personnel". It is probably for this reason that DGM directorates are set up as they are. Since Matrix Management is used, then we must learn to deal with the weak points. These are:

1. Control over personnel
2. Project communication
3. Quick reaction capability.

Control Over Personnel

A serious problem. There has to be a concentrated effort to acquaint personnel at the worker level with the concept of systems so that personnel understand and learn to work under dual supervision. Most people who have been drilled in procedures of static organizations will steadfastly refuse to budge unless they are instructed via 'chain of command' and this, as mentioned earlier, creates red tape. These people do not understand that there is one chain-of-command, two chains-of-authority, and two completely different methods of dealing with personnel. (Dual supervision is not necessarily wrong).

There is also the problem of the control of senior management over systems managers.

It may be said that systems managers feel that they have considerably more authority than senior management felt had been delegated to the systems managers. The ambiguity seems related to many factors :

- abdication of authority on the part of some senior managers
- individual differences in regard to the abilities of various systems managers to make certain decisions
- lack of knowledge on the part of senior managers regarding the specific duties of systems managers.

Project Communication-Quick Reaction Capability

These two are combined for if the problem of communication is removed, most of the problems regarding the latter aspect will be automatically resolved.

The first step toward improvement of communication has just been mentioned, ie, acquaint personnel at the worker level to the concept of systems. Once people understand, distrust will disappear and co-operation and communication will improve. Methods used to improve communication will be shown a little later using the project as the working example.

Psychological Barriers

Some aspects of these have already been discussed, however particular points are now considered.

Psychological barriers are defined as the traits that cause one to believe that the biggest obstacle facing humanity is people.

There are various influences creating the barriers - among them:

- it is human nature to question new methods, ie, they have never done it that way before
- people can't give up their reliance on paper
- there is concern regarding job security, ie, people are afraid their function may be destroyed
- imprecise terminology confuses people, ie, systems, systems managers, project officer, program co-ordinator, project manager, project co-ordinator.

There are no universally standard definitions! Lack of definitions plus the ambiguity of authority results in poor communication. When someone is told that he must now respond to the authority of a systems manager, that someone doesn't know what to expect. People wonder "Why have supervisors when an outsider controls the activities of the workers?" or they ask "Why not let the person with the most interest run the whole project?" These questions lead one to favour a Project Management type of organization whereas the Matrix Management type is desirable for the present conditions in the Cdn Armed Forces.

On to another psychological factor - the informality of it all. Informality is essential for successful systems management in the Matrix configuration. A Captain should not order other Captains; work must be accomplished through much personal contact along with many phone calls. Work must get done with a view to guiding the whole project and when things cannot get done by persuasion and informality then the only resort is to use the more tedious and bureaucratic approach using formal correspondence via chain-of-command.

This brings us now to the characteristics of a systems manager. A systems manager must

- be prepared to forget his technical specialty in order to work with people as his basic tools
- manage resources in an economical manner
- communicate easily with other people

- visualize the operation from the viewpoint of top management.

The fact that the role demands that he have a widely ranging interest in every aspect of the operation - the fact that he must visualize the operation from the viewpoint of top and middle management - the fact that he must be prepared to use much initiative, impose strict restraints on the type of person required.

Even though people are posted to a position it doesn't mean they can do the job, e.g., a specialist in communications with 20 years of technical experience may not be able to switch to become a systems manager for he may be programmed to think in a narrow sense. This narrow sense is not necessarily bad, however for systems management it is.

Let us return to TACCS. I will not go into more details regarding the system but rather I will expound on what I did as systems manager.

When I was first called in for TACCS I was told it was a system and I was system manager -- visions of glory etc, associated with the word "system" and the term "system manager" ran through my mind. I raced back to my cubbyhole with a few bits of paper describing the thing and sat down on cloud nine. Then the truth of the problem started to sink home.

My question was "What do I do as system manager?"

My answer was "You run the DECM part of the program and decide what is best for it".

That was my directive and here is the crux of the problem - no one could give me more specific directives for there were none to be had. There are no books or rules stating the methods and procedures of managing systems and there probably never will be.

I beg your pardon - there are some but they are normally "motherhood" statements such as the following:

"Basically the systems approach involves the following steps:

1 - get a clear view of what is needed and potentially feasible
2 - get a closely reasoned determination of the best course for achieving the desired result
3 - get a dependable measure of the means already available and those we must still discover in order to make do-able what we are setting out to do."

A target date of 3 months by which to complete the refurbishment of the convoy forced me to use the only resource available: common sense. Only after reading extensively did I discover that I had blundered onto the secret of managing systems - common sense. In fact, the following quotation describes the situation best: "Every system application proposal is unique and its feasibility must be based on the system's concept and on common sense".

Also, I was forced into informality and a minimum of paperwork due to the short target date - 3 months. As I proceeded, I experimented with methods of control and found one which was quite effective. In the short run it solved the problem and I now have no doubt that with a few modifications this method could be used for long run problems.

There are basically two controls required:

1 - control of personal data and information in the office
2 - control of personnel and the data they receive and send out.

I control personal data by using:

a. a project book containing
   (i) name, rank, designation, phone number and function of personnel related to the project. The function is especially important both for personal clarity and for continuity in case of absence.
   (ii) a diary containing a digest of all conversations and phone calls regarding the project. Various portions of the overall system have different diaries, it is not all conglomerated into one. I can't overemphasize the importance of this diary. It takes time to fill in but saves much more time later on in the systematic review of things to be done.
   (iii) a monthly summary of activities. This is for personal clarity and for noting milestones for senior management purposes, if they so desire the summaries.
   (iv) file numbers and the index for the project book.

b. project files
   These contain all the correspondence in and out. The breakdown is determined by circumstances, eg, time, amount of paper.

c. a phone
   The usefulness of this means of communication is neglected to the point of being only a means of chattering inane comments requiring no action. One, two, three or four phone calls followed by a message or memorandum confirming the action decided and even begun

on the basis of the phone calls can alleviate weeks of tedious minuting and travel by mail. NOTE - If the reader is appalled at the thought of initiating action without being told to do so on paper, he should read this article over again and especially note the psychological factors, and the fact that systems managers must use a great deal of initiative.

The control of personnel and the data they receive and send is a bit more difficult for here, there is the unknown variable - people. From the psychological barriers it was seen how people resented being controlled by an outsider. Only after much face-to-face contact which included trips to workshops and uncountable phone calls did barriers begin to fall. Once a name and a voice were associated with a face and character, co-operation became easier, phone calls increased, paperwork decreased and a greater efficiency resulted. The key, it appears, is personal contact.

Also, a pattern has been set up whereby all outgoing correspondence regarding this project is info to me. Contacts external to DECM were advised by myself or by Directorate personnel involved in the project to forward all correspondence to me for action. If this process is not followed, then various portions of the project cannot be reviewed in the light of the overall picture.

The final step in controlling projects is to review every two or three weeks all the correspondence and what was written in the diary. The questions are set up along with possible contacts, then most of the day is spent making phone calls and writing a few memos. The same is done at the end of the month in order to write a summary.

In order to improve control, PERT charts should be employed. Properly used, these charts should eliminate problems of timing of events. These charts plus the techniques previously mentioned should clinch the control.

SUMMARY: Support Systems Management in the Canadian Armed Forces is the art of using a "matrix" management system with a System Manager as leader, who coordinates all activities associated with the system, using shortcuts where preferable, common sense always, a great amount of tact and personal persuasion, and who follows-up to successfully accomplish the objective.

GLOSSARY OF TERMS

DDH 280	- advanced navy destroyer presently under construction.
CADIN/PINETREE	- the set of radar stations used by NORAD
DGM	- Director General Maintenance
DECM	- Directorate of Electronics and Communications Maintenance
DESE	- Directorate of Electronic Systems Engineering
DOM	- Directorate of Ordnance Maintenance
ADCL	- Assistant Deputy Chief Logistics
DIMT	- Directorate of Inventory Management - Technical
DIMG	- Directorate of Inventory Management - General
MOBTAG	- 10 Tactical Air Group
AMDU	- Aircraft Maintenance Development Unit
DTPT	- Directorate of Transport
DVFE	- Directorate of Vehicle and Field Engineering

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LAST DINNER - FIRST LADY

By MWO RR GIBSON

The RCEME School Sergeants' Mess will soon be gone; just one more change in the process of amalgamating services and institutes in the Canadian Armed Forces. Known for some months past as The CFB Kingston Sergeants' Mess (McNaughton), the mess will close on 9 Jan 70. Its members, along with those of the former RC SIGS Sergeants' Mess and the Kingston Garrison Sergeants' Mess will move to the building which was for many years the home of The RCEME School Officers' Mess. This new mess will be designated The CFB Kingston Warrant Officers' and Sergeants' Mess.

On Friday, 21 Nov 69, the mess held its last mess dinner and as the evening progressed it became apparent that the esprit-de-corps, the comradeship and the spirit that had always been a tradition in The RCEME School Sergeants' Mess was still there - as strong as ever. It didn't seem to matter at all that the membership now includes RCN, RCCS, RCASC, RCAMC, RCDC, RCOC, RCAPC, C Pro C, C Int C and RCAF.

The Canadian Forces Band, Kingston provided an excellent selection of music which helped set the mood for the occassion. Their medley of wartime songs, including "Pack Up Your Troubles", "Bless 'Em All", "Tipperary" and "Roll Out The Barrel" proved so irresistable that the sound of singing could be heard far outside the walls of the mess.

By the time the band commenced playing the traditional Corps Marches, the usual solemn atmosphere of a mess dinner had been noticeably relaxed. When the Base Chaplains, Maj EV Porrior and Maj JJL Perrault, stood for the playing of their march, they were immediately joined by every member present for a spontaneous singing of "Onward Christian Soldiers".

Also at this, the last mess dinner, the long-standing tradition of all male attendance was broken - much to the delight of the members. Sgt(A) Sheila McCormack, NCO Clerk Trg Adm Platoon at CFSCLOE, became the first female Senior NCO to attend a mess dinner in the mess. As befitted the occassion, she was given a seat of prominence at the head table.

Other head table guests, who were welcomed to the dinner by the Base RSM, CWO DN Campbell, were Col AL Maclean - Base Commander CFB Kingston, Col LH Wylie - Commandant Canadian Forces School of Communications and Land Ordnance Engineering, Col EK Fitzgerald - Commanding Officer Canadian Forces Hospital Kingston, LCol AGM Maitland - Base Technical Services Officer, LCol DF Pruner - SO1 Training Activities Division CFSCLOE, LCol KR Joslin - SO1 Training Standards and Co-ordination Division CFSCLOE and LCol RA Fell - Senior Dental Officer Kingston.

The last PMC of the mess CWO J Szumlanski and his committee comprised of MWO GR Hein, WO I Gillis, WO G Levesque, WO GJ Cleary, WO GG Bellefontaine, WO J Prentice, Sgt MW McClary, Sgt G Harper, Sgt J Quinsey, Sgt L Boehler, Sgt R Lamb (Secretary) plus the Supervisor Sgt R Noble are to be commended for their efforts which made this function such a success.

It was generally agreed by all who attended that this was one of the best mess dinners held since the mess first opened in Aug 1957. According to those who still remember, there has never been another party to equal the one held for the official opening, however, the dinner on 21 Nov was a fitting farewell to the mess that has given so much pleasure and comfort to so many RCEME Warrant Officers and Sergeants.

Photos by WO Russ Slaughter .....

CFHQ TECHNICAL NOTES

BY MAJOR CA MILLAR

VEHICLES

Ferret - A modified hub assembly for the Ferret Scout Car has been designed and tested for 5000 miles by DVFE. Success on this project is expected to permit the reactivation of the Ferret fleet. 202 Workshop Depot is to modify the hubs on all vehicles and rebuild vehicles as required.

1¼ ton RAM - Engineering and user trials have started on the first 1¼ ton RAM prototype vehicles being developed for the Canadian Armed Forces by Chrysler of Canada. The results of these tests, together with the maintenance evaluation, are subsequently used for a product improvement phase which generally precedes the manufacture of pre-production vehicles.

M577A1 - Basic stowage kits for the M577A1 Command Post vehicles have been manufactured at 202 Workshop Depot. These kits are being distributed, and should be installed in accordance with CF EME Manual VEH L109 Instr. 30.

2½ ton SMP - An extensive 2½ ton SMP vehicle replacement programme is under way. High mileage (above 45,000 miles) and severe usage criteria are being used to establish which vehicles are to be replaced.

¼ ton SMP - An additional buy of ¼ ton vehicles is under consideration. Such action (after adoption for Special Equipment Vehicle (SEV) kits), will permit the withdrawal of all M38 vehicles from service, together with high mileage M38A1s.

Oversnow Vehs - A new buy of Model 2000 Snow Cruiser self-propelled sleds is under consideration. The general policy for maintenance of self-propelled sleds is such that they will be rebuilt by base (2nd line) facilities at the end of the second season (or 260 hours of operation), and placed on run-down maintenance after the third season (or 400 hours of operation).

SC Vehs - Due to various financial limitations on the Forces budget at the present time, the procurement of replacement equipments will be under tighter controls over the next six months. Certain standard commercial vehicles may be placed in Extended Life temporarily, however, the general policy remains that submissions for PCC are required when equipments reach the end of their economic life. Extended Life is an expedient to get additional use out of obsolete equipments with minimum expenditure of capital procurement funds.

CE Support Eqpt - Four air-dropable graders and thirteen 15-ton tilt-type trailers are being purchased for construction engineering support in the field. Normal equipment replacement programmes for staff cars, panels, snow removal equipments, buses, and other administrative vehicles are progressing favourably, but at quantities somewhat lower than in previous years. Comprehensive fleet management will be possible as soon as the new Force Structure is fully implemented.

M113A1 - Action has been initiated to provide both a Fitters' Vehicle and a Recovery Vehicle for the M113A1 family of vehicles.

MISCELLANEOUS

Paint - A new green matte finish paint to specification 1 GP 135(b) in colour 503-301 is coming into use by the field force. Further direction will come through command headquarters, and initial stocks of paint are being distributed to local supply facilities for units of Mobile Command.

Cleaning of Vehs - It has been determined that some units are using steam cleaners and high pressure water to clean the inside of vehicles. These practices must be controlled to ensure that installed equipments such as instruments, radios, optics and wiring are not damaged. Defects can be caused to infrared equipments and optical accessories by excessive moisture. A CF EME Manual instruction will be issued on this subject but maintenance personnel must exercise common sense. Units should be advised to reserve steam cleaning and high pressure resources for vehicle exteriors. When interior cleaning is essential, extreme caution must be exercised and special attention given to installed equipment.

Maintenance Instructions - Development is progressing on a standard format for integrated maintenance instructions. Maintenance Administrative Technical Orders (MATOs) will eventually supersede CF EMEs, EOs, AMOs and BRCNs. CF EMEs and EOs will continue to be effective within the Land/MSE element until instructions are rewritten into the new format. Land establishments which normally use CF EME Manuals are well advised to gain access to ex-RCAF Engineering Orders. Those instructions contain a wealth of technical information which can be applied in accordance with good maintenance and engineering practices.

MSPs - Maintenance Support Plans (MSPs) are a maintenance expedient to get equipment support policies into the field as rapidly as possible. Your comments are welcome and should be directed to CFHQ, Attn DOM 2.

Generators - A new family of generators is being developed for the field force. Procurement starts in 1970, and the general order of delivery into 1972 will be 10 KW, 5 KW, 3 KW, 1.5 KW, and 0.5 KW. Special purpose 15 KW and 68.8 KVA generators are being procured for air transportable communication systems.

Fire Extinguishers - Special techniques are commercially available for the winterizing of CO2 and dry chemical fire extinguishers. Partial nitrogen charging will reduce operating temperatures to about -65°F. Units should obtain technical advice on low temperature extinguishers from their Base Fire Chief. Extinguishers used on vehicles, or mounted outdoors in cold weather, must be winterized.

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ADDITIONAL DUTY - CIRCA 1880

(from The Canadian Army Journal)

In the library of the Field Artillery School, Fort Sill, U.S.A., are documents which describe what the problems of a Commanding Officer may have been in the 1880s. These dog-eared and faded papers are in the handwriting of a certain lieutenant who was simultaneously post commander and troop commander with additional duty as post ordnance officer, post quartermaster and post inspector.

Certain items of ordnance equipment were worn out through normal wear and tear. As troop commander, the officer wrote the post commander requesting that they be inspected and condemned. As post commander, he sent this communication to the post ordnance officer for remark. As ordnance officer, he wrote to the post inspector that he saw no objection to this procedure. As post inspector, he sent the communication back to the troop commander for remark as to what precautions had been taken for the care of ordnance property. As troop commander, he sent a long endorsement to the post inspector detailing the precautions that had been taken. As post inspector, he approved this memorandum and sent it to the post commander, who sent to the troop commander an order that the worn-out equipment be destroyed. The troop commander thereupon supervised the destruction of the articles and signed a certificate to that effect.

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LORE OFFICER CLASSIFICATION SPECIFICATION

A team of five RCEME officers, headed by LCol DJ Tidy, CFHQ, recently met in CFB Kingston to write the specifications for the LORE Officer Classification.

The team spent three weeks preparing the specifications, assisted by advisers from the former RCAF Tech MSE list and the RCOC ATO list.

The second draft of the document is now under review at CFHQ.

As more detail is made available, it will be publised in a future issue of The Technical Bulletin.

A NEW TOMAHAWK FOR "TOMAHAWK"

BY CAPT JPA BOUCHER

On Friday 12 September, Maj PP Pospisil, OC 4 Maintenance Company, was made Honorary Chief of the Base Maintenance Detachment - Fort Chambly Tribe, with the presentation of a new tomahawk for the first fall exercise. The presentation was made on behalf of Major WRL Springford, Base Maintenance Officer, and the weary warriors of the detachment by OIC - Base Maintenance Detachment - Fort Chambly, Capt A Boucher.

During the past weeks, this detachment has gone all out during regular and overtime hours to provide the troops of the brigade with a maximum of comfort and excellent working facilities in the way of manufacturing, building, repairing and modifying.

This is another example of the excellent and co-operative efforts of the German civilian and Canadian military technicians working "hand in hand".

The tomahawk itself was the result of a unified effort involving practically all sections of the detachment such as weapons, machinist, welder, textile, carpenter, tinsmith, paint and sheet metal. The tomahawk even passed the Out Inspection.

The first presentation was made during a small gathering of military and civilians in the Corporals' Lounge at Fort Chambly. Unfortunately, all personnel were not able to be present because of necessary workload commitments. The official presentation was made on 15 September prior to the departure of the Chief of 4 Maint Coy for "TOMAHAWK" Exercise.

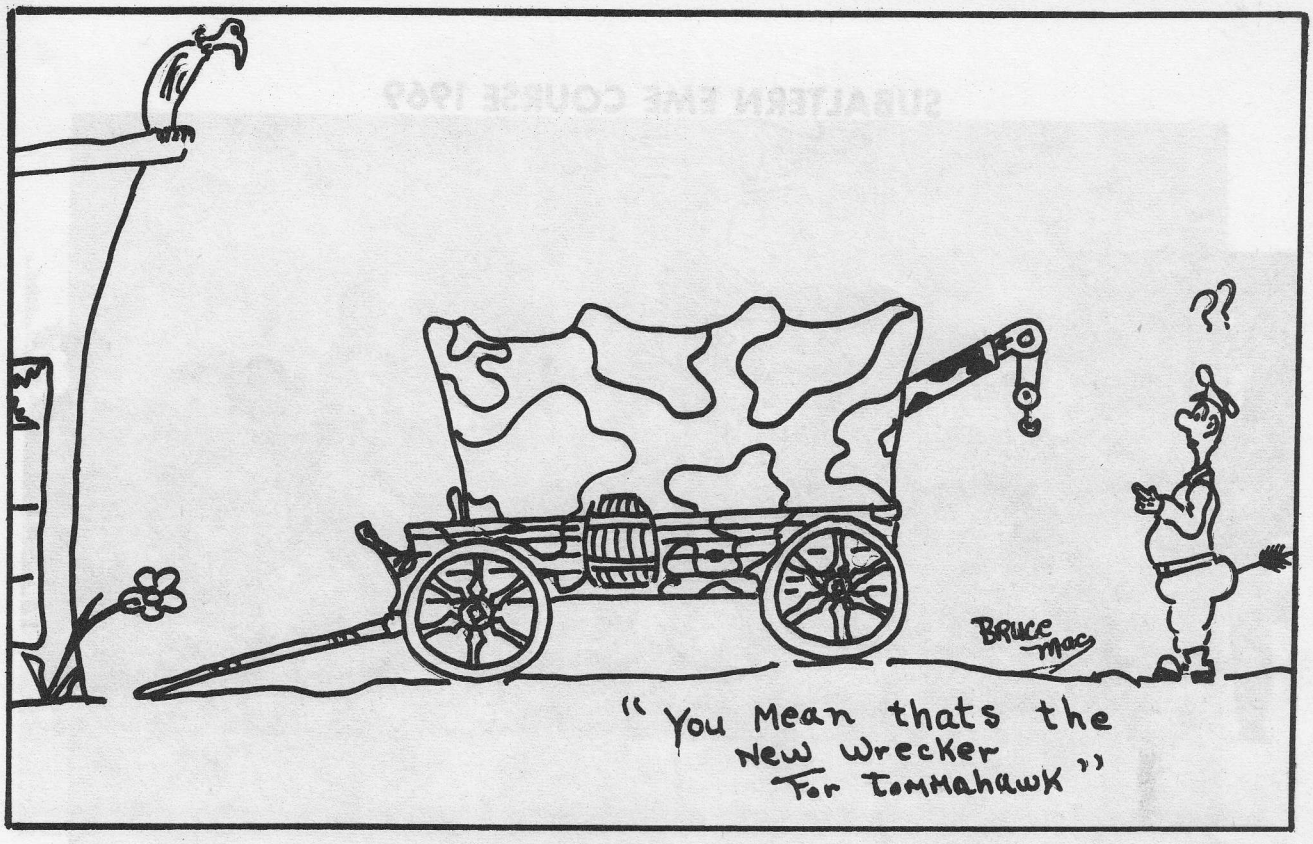
On the same occasion a card was presented, which read as follows:

"UGH! MAY CHIEF GET-UM MANY SCALPS ON TOMAHAWK WAR PARTY. MANY GREETINGS FROM BRAVE WARRIORS OF REAR PARTY WHO FOR MANY MOONS WILL LOOK-UM AFTER SQUAWS AND KEEP-UM WIGWAM FIRES BURNING. UGH!"

Capt Boucher makes the presentation to Chief Pospisil . MWO K Gourlay, Production Supervisor and Dr. H Geier, civilian representative and translator are on hand to wish the Chief "good hunting".

UGH! MAY CHIEF GET-UM MANY SCALPS
ON TOMAHAWK WAR PARTY
MANY GREETINGS FROM BRAVE WARRIORS
OF REAR PARTY WHO FOR MANY MOONS
WILL LOOK-UM AFTER SQWAWS AND
KEEP-UM WIGWAM FIRES BURNING UGH!

The 'weapon', still waiting to claim → its first victim.



DID YOU KNOW_

THAT the reason a Lieutenant-General is senior to a Major-General is because away back in history the original rank of Major-General was known as Sergeant-Major-General. Of course, a Lieutenant was senior to a Sergeant-Major so, at the general rank the anomaly popped up. Through the years the Sergeant prefix of Sergeant-Major-General was dropped from common usage.

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THAT the salute was originally a means of recognizing friend from foe. In the days when fighting men wore full armour, the visor on the helmet was often worn in the lowered position. When two warriors met under these circumstances, the right hand was used to raise the visor, thus revealing the facial features to permit recognition. When armour was discarded, raising the right hand to the head developed into a form of recognizing and paying respect to senior ranks and nobility. Salute is derived from the French "salut" which literally translated means "greeting".

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THAT The RCEME Museum is always happy to receive momentos, photos, badges, books, equipments and bric-a-brac dealing with the Corps of RCEME OR any RCEME unit. Each item should be identified and accompanied by a short write-up giving as much detail as possible about the item such as dates, where it was located or used, name of contributor, etc.

The RCEME Museum is located in Building C-19, McNaughton Barracks, Kingston, Ont and is open from 1300 hrs to 1600 hrs Mon, Tue, Thur and Fri of each week. Personnel travelling through or near Kingston should make it a point to visit the museum and see the many interesting displays.

SUBALTERN EME COURSE 1969

FRONT ROW - Lt RA Nickerson, Lt JA Langlois, Lt JR Cusson, Lt LJ Totton, Capt RE Betzner (P1 Comd Offr Trg Platoon), Maj LA Leflar (OC A2 Coy), Lt L Guilbault, Lt AG Montgiraud, Lt EL Wallace, Lt RN Robinson

BACK ROW - Lt AF Guard, Lt JE Hutchins, Lt WE Brooks, Lt BR Wasilewski, Lt FJ Rosadiuk, Lt TR Hardwick, Lt WH Martin, Lt RM Meharey, Lt DF Ferguson, Lt MF Bardon, Lt WH Hightower, Lt RJ Vincent, Lt LM McClafferty

MISSING FROM PHOTO - Lt SD Morden

This course, being conducted by A2 Coy, CFSCLOE, has among its students 12 officers who graduated, on 11 Mar 69, from the first integrated CFR course held at CFB Esquimalt. Since being commissioned, these officers have been serving at various maintenance units and headquarters before arriving at CFSCLOE 2 Sep 69 to commence Subaltern EME training.

Lts Nickerson, Guilbault, Robinson, Guard, Brooks, Hardwick, Martin, Meharey, Hightower, McClafferty and Morden were all RCEME Warrant Officers or Master Warrant Officers prior to commissioning. These officers were selected from various trades in RCEME - Veh Tech, Wpns Tech, Rad Tech, Rdr Tech and El M Tech.

For Lt Rosadiuk, wearing the RCEME badge is a new experience. His service as an OR had been with the Air Element as an Integral Systems Technician.

Top student on the course, and winner of the sword presented annually on behalf of The RCEME Corps Association, was Lt LM McClafferty.

Placing first is not a new experience for Lt McClafferty. He also received the award as top student on the CFR course in Esquimalt.

The Base Commander, CFB Kingston, Col AL Maclean presents Lt LM McClafferty with the sword presented annually to the outstanding student on the Sub EME course, while Col LH Wylie, Commandant CFSCLOE looks on.

THE MILITIA PAGE

49 TECH SQUADRON RCEME

Beginning now, and in each future issue of the Technical Bulletin, we plan to present a biographical sketch of a RCEME Militia OC and the unit he commands. We have chosen 49 Technical Squadron RCEME as the first unit to be featured because of their excellent showing in the 1969 RCEME Corps Association competitions.

-- Editor

49 Technical Squadron RCEME is our westernmost RCEME Militia unit and the only one in the province of British Columbia. Formerly 8 Technical Regiment RCEME, it now forms part of the Vancouver Service Battalion.

With approximately 55 all ranks, this unit was able to maintain an effective strength of over 90% during 1969. The unit attendance at summer camp was 100% of the vacancies alloted, 23 out of 23.

Since both these factors are considered in determining the winner of the William Lennox Thompson Trophy, there is little doubt why 49 Technical Squadron captured this valuable award in 1969. The William Lennox Thompson Trophy is awarded annually by The RCEME Corps Association to the RCEME Technical Squadron displaying the highest degree of unit efficiency.

In addition, 49 Technical Squadron was declared the 1969 winner of The RCEME Corps Association Rifle Competition. The unit average for all ranks was 81.1%.

In Oct 1967 this unit had the distinction of being probably the only RCEME unit to ever carry out repairs to a submarine. A US Navy submarine, the USS "greenfish", arrived in Vancouver from Hawaii with a punctured ballast tank and could not submerge. Two days of continuous work by tradesmen from 49 Technical Squadron resulted in a successful repair. The submarine was able to proceed on its way with a steel plate welded over the hole.

The Commanding Officer of 49 Technical Squadron RCEME is Major Stanley Dzuba, CD. Maj Dzuba's military career began in 1950 when he enlisted in the RCAF, serving as a Corporal Radar Technician until 1954. In that year he entered the ROTP Plan as a RCEME Officer Cadet, graduating in 1958. He served as a RCEME Lieutenant in the Regular Force until 1961. Following his release, from 1961 to 1964, he was a Captain with 3 Signals Regiment (M), Ottawa.

With a move to Vancouver, he once again became associated with RCEME and held the appointment of Training Officer with 49 Technical Squadron until he was promoted to his present rank and appointed CO of the unit in Sept 1967.

Major Dzuba attended the University of Saskatchewan and has degrees in Bachelor of Law and Bachelor of Engineering (Elec).

When he is not directing the various activities of 49 Technical Squadron, Major Dzuba is Regional Superintendant Telecommunications Regulations Engineering, Pacific Region, Department of Communications.

Who's Where

LOCATION OF RCEME OFFICERS

Locations are from available records held at CFSCLOE, amended from CFSOs up to and including the issue of 31 Oct 69.

BRIGADIER GENERAL

A	Mendelsohn	CFHQ, DGM

COLONEL

JC	Boughton	CADEE, Quebec
GW	Bruce	202 Wksp Dep Montreal
AL	Maclean	CFB Kingston
WJ	Owens	CFHQ, DVFE
AM	Reid	HQ Mobcom
KR	Ward	CFHQ, DOM

LIEUTENANT COLONEL

J	Adams	CFHQ, LETE
CH	Betts	CFHQ, DGOS
BB	Cox	9 CFS&MD, London
EB	Creber	Nat Defence College
RF	Fendick	CFHQ, D Tech D
SA	Girdler	CFHQ, DOM
DV	Geary	1 Svc Bn, Calgary
WH	Glover	9 CFS&MD, London
EC	Illott	CFHQ, DGOS
FG	Johnson	CFHQ, DGOS
KR	Joslin	CFSCLOE, Kingston
KT	Kennah	CFB Halifax
RW	Libbey	CFHQ, DC ENG/DPM
JH	MacLean	CFHQ, DVFE
ALD	MacDonell	HQ Mobcom
AGM	Maitland	CFB Kingston
CG	Racicot	CFB Montreal
RC	Rivers	CFHQ, DOM
M	Ruscher	CFHQ, DEVIL Program
RB	Screaton	3 Svc Bn, Gagetown
WG	Svab	CFHQ, DOM
DJ	Tidy	CFHQ, DPF
JM	Treleaven	CFHQ, DME
FW	Chapman	4 Svc Bn, Europe

MAJOR

KI	Anderson	2 Svc Bn, Petawawa
P	Bateson	CDLS Washington (Rock Island)
JM	Bourassa	CFHQ, DOM
JE	Brown	202 Wksp Dep Montreal
GR	Burton	CFB Winnipeg
HD	Byer	2 Svc Bn, Petawawa
G	Charles	CFHQ, LETE
CA	Churchill	CFB Halifax
BL	Code	3 Svc Bn, Gagetown
JH	Cooper	CFHQ, DAM

MAJOR

BM	Deibert	CFB Borden
JGR	Doucet	HQ Mobcom
DH	Fraser	202 Wksp Dep Montreal
RE	Goulding	HQ Trg Comd
NA	Graham	CFB Kingston
PM	Graye	CDLS Washington
JR	Griffin	CDLS London Eng
WJA	Groom	CFHQ, DASE
DV	Hampson	202 Wksp Dep Montreal
HV	Hann	9 CFS&MD, London
PEV	Hanson	CFB Trenton
HJ	Hellard	CFSCLOE, Kingston
CB	Hellyer	CFHQ, DVFE
FA	Hlohovsky	HQ Mobcom
HW	House	CFHQ, DOM
FG	Hutson	Cdn Forces College Toronto
ID	Isbester	CFHQ, DEVIL Program
MC	Johnston	CFHQ, DEVIL Program
GW	Keays	CFB Chilliwack
NE	Laviolette	CFB Valcartier
LA	Leflar	CFSCLOE, Kingston
JW	Lelacheur	CFB Montreal
JW	Lowthian	RMC, Kingston
WF	Lucano	HQ Trg Comd
AM	MacDonald	CFHQ, DASE
RL	MacIntosh	CFHQ, DVFE
RH	MacLeod	CFB Halifax
GE	Maguire	CFSCLOE, Kingston
RB	Manning	Cdn Forces College Toronto
MG	Masuda	CFHQ, DVFE
JD	McDougall	CFHQ, DVFE
AL	McEachern	CFB Edmonton
CA	Millar	CFHQ, DOM
RW	Miller	CDLS London Eng
CR	Morgan	CDLS Washington (Detroit Arsenal)
DA	Nicholson	CDLS London Eng
PH	North	CFHQ, DVFE
WH	Norton	CFHQ, DGPC/DPCSE
CA	Penny	403 Hel Op Trg Sqn, Petawawa
DB	Perrin	CDLS London Eng
R	Peters	CFSCLOE, Kingston
PP	Pospisil	4 Svc Bn, Europe
HG	Ray	HQ Mobcom
JA	Richards	CAFTT Ghana
EA	Rochefort	9 CFS&MD, London
HA	Rosson	CFHQ, DOM
LA	Sainsbury	CFHQ, DOM
GD	Savage	CFHQ, DOM
JO	Sheehan	202 Wksp Dep Montreal

MAJOR

WRL	Springford	CFB Soest
AR	Thomsen	HMC Dockyard Halifax
PA	Tuck	CFHQ, DERL
EA	Williams	CFHQ, DCIS
DE	Wilson	CAFTT Ghana

CAPTAIN

JH	Armstrong	9 CFS&MD, London
LW	Armstrong	HQ Ont Region Oakville
WD	Armstrong	4 Svc Bn, Europe
FH	Atwood	2 Svc Bn, Petawawa
DS	Axford	CFHQ, DMRE
KD	Baird	1 RCHA, Europe
WGA	Barrey	CFHQ, LETE
RE	Betzner	CFSCLOE, Kingston
JAB	Bouchard	3 R22R, Valcartier
JP	Boucher	CFB Soest
JP	Branchaud	4 Svc Bn, Europe
GN	Brent	CFHQ, DOM
RP	Britt	CFB Soest
BP	Brown	2 RCR, Europe
PL	Burcombe	202 Wksp Dep Montreal
DL	Clarke	CFB Borden
PG	Collinge	4 Svc Bn, Europe
JR	Convey	1 Svc Bn, Calgary
RF	Conway	9 CFS&MD, London
JT	Cooper	4 Svc Bn, Europe
JG	Crookston	CFSCLOE, Kingston
PJ	Dagenais	2 R22R, Cyprus
GW	Davies	2 Svc Bn, Petawawa
JS	Davies	CFB Kingston
JCG	Dupont	12e Regt Blinde du Canada Valcartier
OA	Edmond	CFB London
JT	Enright	8th Hussars, Petawawa
DH	Feller	CFB Montreal
JNR	Fisher	CLFC&SC, Kingston
AB	Fuller	CFB Winnipeg
JJ	Fyfe	4 Svc Bn, Europe
AR	Gillis	CFB Soest
JP	Girard	5e Regt d'artillerie legere, Valcartier
GW	Godspn	4 Svc Bn, Europe
RA	Green	CFB Montreal
DR	Hamilton	CFSCLOE, Kingston
GT	Hammond	CFHQ, DMPC
JI	Hanson	CLFC&SC, Kingston
JR	Hardy	CFSCLOE, Kingston
LL	Hellemans	CFB Soest
KW	Henderson	CFHQ, DPCSE
JS	Holt	CFSCLOE, Kingston
EF	Joyner	2 Svc Bn, Petawawa
JJ	Kane	202 Wksp Dep Montreal
DC	Kaufman	9 CFS&MD, London
JR	Kaye	CFB Calgary (Wainwright)
HG	Kayne	CFHQ, DOM
BE	Kelly	3 RCHA, Winnipeg
RP	Kudar	1 RCR, London

CAPTAIN

WW	Laird	CFSCLOE, Kingston
FH	Leach	CFB Rivers
FG	Legg	1 Svc Bn, Calgary
CW	MacDonald	CFHQ, DOM
AI	MacKenzie	CFB Montreal
PC	Marriner	RMC, Kingston
WR	McCauchan	CFB Shilo
LF	McLeod	3 Svc Bn, Gagetown
GR	Melvin	2 Svc Bn, Petawawa
JGG	Nappert	1 R22R, Europe
JA	Nault	202 Wksp Dep Montreal
A	Nellestyn	4 Svc Bn, Europe
JF	O'Connor	202 Wksp Dep Montreal
TJ	Panke	2 Cdn Guards, Petawawa
JGM	Pedneault	4 Svc Bn, Europe
V	Pergat	2 PPCLI, Europe
KMC	Pirt	CFB Rivers
NE	Pothier	CFHQ, DEVIL Program
PG	Pothier	CFB Chilliwack
CF	Potter	RCD, Gagetown
RV	Potter	4 Svc Bn, Europe
GA	Riley	CFB Edmonton
WD	Roche	CFHQ, DEVIL Program
JGH	Roy	CFB Soest
FG	Scagnetti	Ld SH (RC), Europe
RH	Seguin	202 Wksp Dep Montreal
HT	Simpson	4 Svc Bn, Europe
GA	Smith	CFB Halifax
NC	Smith	CFSCLOE, Kingston
JD	Snell	CFB Kingston
CN	Sochasky	CFSCLOE, Kingston
JH	Spackman	CFB Toronto
RG	St Aubin	4 Svc Bn, Europe
DW	Stevens	CFHQ, DOM
JA	Stott	CFB Winnipeg
TW	Strang	CFSIT, Clinton
IJ	Taylor	CFB Toronto
R	Thomas	1 Svc Bn, Calgary
JT	Thompson	HQ Mobcom
KM	Trevors	FGH, Calgary
BG	Walker	CFHQ, Devil Program
J	Walker	CFHQ, DEVIL Program
RL	Walker	CFB Rockcliffe
ET	Weston	CFHQ, DOM
TG	Whitehead	CFSCLOE, Kingston
WJ	Wood	CFHQ, DOM

LIEUTENANT

RJ	Alexander	3 Svc Bn, Gagetown
CJ	Ashdown	HQ ADC, North Bay
RJ	Atkin	403 Hel Op Trg Sqn, Petawawa
NE	Austin	4 Svc Bn, Europe
MFR	Bardon	CFSCLOE, Kingston
BW	Bellamy	CFB Borden
JMP	Berube	202 Wksp Dep Montreal
GT	Bingham	1 QOR, Victoria
WE	Brooks	2 Svc Bn, Petawawa

LIEUTENANT

PF	Burman	2 Svc Bn, Petawawa
MAC	Campbell	CFB Chilliwack
DW	Clarke	Cdn AB Regt, Edmonton
JAR	Coulombe	1 Svc Bn, Calgary
RJ	Curran	CFHQ, DOM
JR	Cusson	CFSCLOE, Kingston
JA	Duchesne	5 Svc Bn, Valcartier
DF	Ferguson	4 Svc Bn, Europe
JJR	Gagnon	5 Svc Bn, Valcartier
EB	Gerhardt	1 Svc Bn, Calgary
JER	Grenier	1 Svc Bn, Calgary
AF	Guard	3 Svc Bn, Gagetown
JAR	Guertin	CF Trainee Estb
L	Guilbault	2 RCHA, Gagetown
DR	Hartwick	4 Svc Bn, Europe
TR	Hardwick	1 Svc Bn, Calgary
WH	Hightower	202 Wksp Dep Montreal
HT	Higuchi	CFB Shilo
VE	Hoskin	Fd Service Supply Group Edmonton
E	Housken	1 RHR of C, Gagetown
JE	Hutchins	CFSCLOE, Kingston
PD	Kerr	202 Wksp Dep Montreal
J	Kimber	CFB Kingston
KW	Kirkland	Offr School, Esquimalt
JM	Lafleur	CFSCLOE, Kingston
JD	Lafrance	2 R22R, Cyprus
BG	Lamarre	CFSCLOE, Kingston
RL	Langdon	CFB Moose Jaw
JA	Langlois	CFSCLOE, Kingston
JME	LaRoche	202 Wksp Dep Montreal
JJL	LeBoeuf	CF Language School, St Jean
JCM	LeClerc	CFB Rockcliffe
WJ	Leslie	1 PPCLI, Calgary
RE	Lightly	2 Svc Bn, Petawawa
KO	Loven	CFB Esquimalt
TF	Lydon	1 Cdn Sig Regt, Kingston
JJ	Marleau	5 Svc Bn, Valcartier
RJ	Martin	Offr School, Esquimalt
WH	Martin	2 Svc Bn, Petawawa
RPT	Massicote	CF Language School, St Jean
CE	McClafferty	4 Svc Bn, Europe
LM	McClafferty	3 Svc Bn, Gagetown
JA	McDonald	4 RCHA, Petawawa
RM	Meharey	3 Svc Bn, Gagetown
AG	Montgiraud	CFB Kingston
CJ	Mooney	450 (Hel Tpt) Sqn St Hubert
SD	Morden	CFSCLOE, Kingston
JD	Murphy	CFHQ, CTS Br
RA	Nickerson	CFSCLOE, Kingston
DE	O'Shaughnessey	CF Language School St Jean
DB	Parker	CFSCLOE, Kingston
FG	Parsons	CFHQ, DEVIL Program
JR	Porritt	3 Svc Bn, Gagetown
RJ	Powell	1 Svc Bn, Calgary

LIEUTENANT

RHJ	Reich	CFSCLOE, Kingston
RN	Robinson	CFB Toronto
FJ	Rosadiuk	CFSCLOE, Kingston
SA	Shewchuk	3 Svc Bn, Gagetown
JAY	St Laurent	5 Svc Bn, Valcartier
SD	Suley	450 (Hel Tpt) Sqn Edmonton
LJ	Totton	CFSCLOE, Kingston
JAY	Turmel	202 Wksp Dep Montreal
RJ	Vincent	CFSCLOE, Kingston
EL	Wallace	CFSCLOE, Kingston
RR	Wasilewski	CFSCLOE, Kingston
JP	Williams	CFSCLOE, Kingston
JA	Woodrow	9 CFS&MD, London
TS	Wright	HQ Mobcom